

## Abstract

The present invention provides a method for fabrication of polycrystalline silicon thin film transistors, which comprises polysilicon spacer capping onto the sidewall of the active layer in thin film transistors by an isotropic dry etching for silicon film. This method can suppress the shrinkage of the active layer during recrystallization by laser. Large grains can be formed in the channel after recrystallization of high-energy continuous wavelength laser or recrystallization of excimer laser annealing on active layer. This process does not require any additional mask. Uniform arrangement of grain boundaries and large grain sizes can promote device performance uniformity. This technique will play an important role in the fields of low temperature polycrystalline silicon thin film transistors (LTPS-TFTs).